

What is claimed is:

1. A side airbag for an automobile installed to the side of a chair back of an automobile and having an inflator which supplies gas by explosion upon receiving of a signal through an electric wire when the automobile crashes, the side airbag comprising:

a first airbag module (100) including first and second cushion pads (130, 140) having extensions (133, 143) with a plurality of insert holes (132, 142) on one side and [combined each other^{with?}] to form a second chamber (131) for filling gas therein, and an inner cushion pad (150), which is folded in a half to form a first chamber (151) between the first and second cushion pads (130, 140) and has a plurality of first gas exhaust holes (152) formed upward thereon and an inflator-mounting portion (158) which is piled with the extensions (133, 143); and

an inflator module (170) including a fixing member (180) having first and second mounting holes (182, 186) into which both sides of the inflator are inserted, the fixing member (180) fixing the first airbag module (100) to the inside of the side of the chair back by inserting outwardly protruded screws (184) thereof into the insert holes (132, 142) of the first and second cushion pads (130, 140) and into an insert hole (156) of the inner cushion pad (150).

2. The side airbag for an automobile as claimed in claim 1,

wherein the first airbag module (100) is seamed to open the inflator-mounting portion (158) when the first and second cushion pads (130, 140) are piled with the inner cushion pad (150) so that the first airbag module (100) has a seam line (136) sealing the

gas supplied from the inflator and fill up in the first and second chambers (151, 131).

3. The side airbag for an automobile as claimed in claim 2, wherein the seam line (136) is formed in two lines.

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4. The side airbag for an automobile as claimed in claim 2,
wherein the first airbag module (100) further includes first and second reinforcing lines (137, 138) having an oval shape transformed at an end of the seam line (136) so as to prevent the first and second cushion pads (130, 140) and the inner cushion pad (150) from being torn.

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5. The side airbag for an automobile as claimed in claim 1,
wherein the first and second cushion pads (130, 140) include a cushion seam line (146) for seaming a center of the first and second cushion pads (130, 140) in order to prevent the first and second chambers (151, 131) from being excessively inflated with the supplied gas.

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6. The side airbag for an automobile as claimed in claim 5,
wherein the cushion seam line (146) has circular portions (147) formed in a semicircular shape at both ends thereof and a straight portion (148) to connect the circular portions (147).

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7. The side airbag for an automobile as claimed in claim 4, wherein the

cushion seam line (146) are formed in two lines.

8. The side airbag for an automobile as claimed in claim 1,

wherein the first and second cushion pads (130, 140) and the inner cushion pad
5 (150) are stacked with each warp thread being arranged perpendicular to each other so
as to prevent gas from flowing out of the inner side of the first and second cushion pads
(130, 140) when the inner cushion pad (150) is inflated.

9. The side airbag for an automobile as claimed in claim 8,

10 wherein the warp threads of the first and second cushion pads (130, 140) are
identically oriented to a longitudinal direction, while the warp thread of the inner cushion
pad (150) is oriented to a horizontal direction.

10. The side airbag for an automobile as claimed in claim 1, further

15 comprising a plurality of reinforcing pads (160) seamed to an inner side of the
inflator-mounting portion (158) of the inner cushion pad (150), each reinforcing pad
(160) having a thread hole (162) into which the screws (184) of the fixing member (180)
is inserted.

20 11. The side airbag for an automobile as claimed in claim 10,

wherein the reinforcing pad (160) is combined by a double seam line (164), which
is formed in a circular shape around the insert hole (156) of the inner cushion pad (150).

12. The side airbag for an automobile as claimed in claim 1,
wherein the first gas exhaust hole (152) of the inner cushion pad (150) has a
diameter of 15mm ~ 40mm so that the first airbag module (100) is fully developed within
1/1000 ~ 4/1000 second.

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13. A method of folding a side airbag for an automobile comprising the steps
of:

folding ends (a) of first and second pads (130, 140), positioned at an opposite
side to an inner cushion pad (150), to a position near a cushion seam line (146);

10 folding right portions (b) of the first and second folded cushion pads (130, 140)
leftward so that an upper side of an inflator-mounting portion (158) becomes
perpendicular to a right side of the right portion (b);

folding left portions (c) of the first and second folded cushion pads (130, 140)
rightward to be partially piled with the right portion (b) so that the upper side of the
15 inflator-mounting portion (158) becomes perpendicular to a left side of the left portion
(c);

folding lower portions (d) of the first and second cushion pads (130, 140)
upward so that a lower side of the lower portion (d) becomes substantially parallel to the
upper side of the inflator-mounting portion (158), making the first airbag module (100)
20 folded in a rectangular shape; and

partitioning the first airbag module (100) into three sections (e, f, g) to be folded
so that the first airbag module has a size identical to a finally folded section (i).

14. A side airbag for an automobile installed to the side of a chair back of the automobile and having an inflator which supplies gas by explosion on the receipt of a signal through an electric wire when the automobile crashes, the side airbag comprising a combining second airbag module (200) which includes:

5 (third) cushion pads (230, 230') for forming a first chamber (151), to an inflator-mounting portion (158) of which reinforcing pads (160, 161) are attached along a seam line (290) for heat-blocking and structural reinforcing, the third cushion pads (230, 230') having a tear seam (246) at a center thereof; and

10 a fourth cushion pad (240) to form a second chamber (131) by seaming both ends (243, 244) to combining lines (293, 294) marked at a center of the third cushion pad (230) and then seaming an outer seam line (291),

wherein the second airbag module (200) is folded by folding the fourth cushion pad (240) in advance to be arranged in the first chamber (151), and then piling the third cushion pad (230) and seaming the third cushion pad (230) along seam lines (292, 295)

15 so that the inflator-mounting portion (158) is opened.

15. The side airbag for an automobile as claimed in claim 14,

20 wherein the tear seam (246) is to be ruptured so that the fourth cushion pad (240) arranged in the first chamber (151) may be punched out by the gas supplied from the inflator with less bag rotation, and the tear seam (246) having a shorter length than the vertical width of the third cushion pad (230).

16. A side airbag for an automobile installed to a side of a chair back of the

automobile and having an inflator which supplies gas by explosion up on receiving a signal through an electric wire when the automobile crashes, the side airbag comprising a third airbag module (300) which includes:

fifth and sixth cushion pads (330, 340) having lateral tether-attaching portions
5 (335, 345) at inner centers thereof; and

a tube-type tether (350) seamed at the tether-attaching portions (335, 345) to form a center chamber (141),

wherein the tube-type tether (350) forms a plurality of gas exhaust holes (352, 353') and a passage (359) so that the third airbag module (300) supplies from the center
10 thereof to a lower first chamber (151) and an upper second chamber (131), respectively.

17. The side airbag for an automobile as claimed in claim 16,

wherein the tube-type tether (350) is weaved to a direction perpendicular to the fifth and sixth cushion pads (330, 340).

18. The side airbag for an automobile as claimed in claim 16,

wherein the passage (359) has a reinforcing pad (358) seamed at an end thereof and a combining hole (356) into which a screw of the inflator is inserted.

19. The side airbag for an automobile as claimed in claim 18,

wherein the tube-type tether (350) is weaved to a direction perpendicular to the fifth and sixth cushion pads (330, 340).